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CLAIM LIST

1-11. (cancelled)

12. (currently amended) A scanning microscope which comprises a laser providing an incident beam, a beam splitter, a scanner for scanning an image plane in a specimen section in general orthogonal X-Y directions in said plane, said laser being a plural transverse mode laser providing an amplitude distribution having a plurality of lobes in opposing phase relationship to form spaced spots in a focal plane in said section and capable of overlapping spots at one of behind, ahead, or behind and ahead of the section behind said section, and an objective for focusing said spots in said focal plane, an aperture, a photodetector behind said aperture, and optics for focusing return light from the spots deflected by said beam splitter at said aperture in which the part of said return light from sites adjacent said section at one of behind, ahead, or behind and ahead of the section is reduced.

13. (previously amended) The microscope according to Claim 12 wherein said objective is movable together in a Z direction, generally orthogonal to said X-Y directions thereby selecting different focal planes of said specimen where said spaced spots are incident.

14. (previously amended) An optical coherence imaging system for imaging a specimen section, which comprises a source providing light having low temporal coherence propagating in transverse, opposing-phase, multi-mode, a beam splitter which directs the light from said source into a reference arm and a sample arm wherein the light is incident on an image plane in said transverse, opposing phase, multi-mode in which it propagates to said image plane in the specimen section and capable of spatially overlapping behind the image plane, a scanner in said sample arm for scanning said specimen in generally orthogonal directions, and also in said sample arm, an objective having an optical axis for focusing said low temporal coherence transverse, opposing phase, multi-mode light at a plurality of spots, a detection arm into which light is directed

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by said beam splitter from said reference and sample arms, and means for providing images in response to interference of light in said detection arm.

15. (original) The system according to Claim 14 wherein said objective is movable in a direction generally orthogonal to said orthogonal directions thereby selecting different image planes in said specimen.

16. (original) The system of Claim 14 wherein said source is a multi-mode laser propagating said incident light in TEM modes higher than the TEM₀₀ mode.

17. (original) The system of Claim 14 wherein said beam splitter is a non-polarizing beam splitter.

18. (currently amended) A system for imaging a section (or sections) of tissue comprising means for producing a beam having multiple, opposing-phase, transverse propagating modes, means for focusing said beam at a plurality of spots in said section of said tissue in accordance with said multiple, opposing phase, modes in which said modes are capable of overlapping at one of behind, ahead, or behind and ahead of ~~behind the~~ section, and collecting return light from said tissue, and means for detecting said return light combined from said plural spots to provide images representing said section of said tissue in which said modes overlap to reduce the part of the return light from sites adjacent the section at one of behind, ahead, or behind and ahead of the section.

19. (previously presented) A system for imaging a section of a medium which receives and returns light from the section and from sites adjacent to the section, said system comprising:

optics for directing light in beams of different transverse modes in said medium across an imaging plane inside the medium and collecting returned light from the medium, wherein said optics further comprise an objective, and said light directed into

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the medium and said returned light collected from the medium share substantially said objective; and

said beams are overlapping in said medium outside the imaged section to reduce the part of said returned light from the sites adjacent said section on opposite sides of said section in the direction of propagation of the beams.